

Remarks

This Reply is in response to the Final Office Action mailed May 12, 2008. All citations made to paragraph numbers found in this Reply will be made to the Application *as published*.

I. Summary of Examiner's Rejections

Prior to the Office Action mailed on May 12, 2008, Claims 1, 3-9 and 11-19 were pending in the Application. In the Office Action, Claims 1, 3-9, 11-6 and 19 were rejected under 35 U.S.C. 103(a) as being unpatentable over Tserng, US 6,570,608 (hereinafter "Tserng") further in view of Porikli, US 2003/0118214 (hereinafter "Porikli") and Divakaran et al., US 6,697,523 (hereinafter "Divakaran," a reference of record). Claims 17 and 18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Tserng, Porikli and Divakaran as applied to claims 1 and 15 above, and further in view of Xu, US 2003/0108238 (hereinafter "Xu").

II. Summary of Applicant's Amendments

The present Reply amends claims 1, 7, 11-13, and 19, all as shown above. Applicants respectfully reserve the right to prosecute any originally presented or cancelled claims in a continuing or future application.

III. Claim Rejections Under 35 U.S.C. § 103(a)

In the Office Action, Claims 1, 3-9, 11-6 and 19 were rejected under 35 U.S.C. 103(a) as being unpatentable over Tserng, US 6,570,608 (hereinafter "Tserng") further in view of Porikli, US 2003/0118214 (hereinafter "Porikli") and Divakaran et al., US 6,697,523 (hereinafter "Divakaran," a reference of record). Claims 17 and 18 were rejected under 35 U.S.C. 103(a) as being unpatentable over Tserng, Porikli and Divakaran as applied to claims 1 and 15 above, and further in view of Xu, US 2003/0108238 (hereinafter "Xu").

Claim 1

Claim 1 has been amended by the current Reply to more clearly define the embodiment therein. As amended, Claim 1 defines:

1. (Currently Amended) A method for finding a region of high importance in a video, the video including a plurality of video frames having pixels, wherein the video is regarded as a three dimensional volume in a x-y-t space, the t-component of the x-y-t space

representing a time axis, comprising:
determining a kinetic energy for the pixels within the video;
assigning pixel values to the pixels within the video based on the kinetic energy of the pixels;
constructing pixel groups from the pixels based on pixel values, wherein the pixels having pixel values below a threshold value are not included in any pixel group;
merging pixel groups together to generate regions of high importance, wherein the pixel groups are merged together provided that they do not fail one or more stopping conditions; and
constructing one or more predetermined three-dimensional shapes to represent the regions of high importance, the predetermined three-dimensional shapes having three dimensional volumes in the x-y-t space.

Applicants' representative respectfully submits that the invention embodied in Claim 1 is not obvious in light of Tserng and/or Porikli. Divakaran is irrelevant to Claim 1.

Tserng, among other things, does not disclose a method that involves three dimensional volumes. The ability and methodology of dealing with three dimensional volumes in x-y-t space would not be obvious in light of Tserng. Moreover, Tserng does not merge pixel groups together to generate regions of high importance. Instead, a bounded box is drawn around an area containing pixels of interest. (C6, L15-22). This bounded box cannot be considered the same thing as the pixel groups set forth in Claim 1 because the pixels having pixel values below a threshold value are expressly not included in any pixel group in Claim 1. The 2-D bounded box disclosed in Tserng, however, would include both pixels of interest and pixels that are not of interest. Thus, the method disclosed in Claim 1 is inherently different from the method set forth in Tserng.

Porikli does not disclose the method embodied in Claim 1 for, among other things, the following reasons. In Porikli, volumes are grown using a color based centroid linkage method. In Porikli, every single pixel in a video is grouped together as a part of a bigger volume. See Paragraph 0026-0028. These volumes appear to represent objects within the video. As to the invention embodied in Claim 1, identifying a region of high importance is not based on color (as in Porikli), but on kinetic energy. In fact, Porikli expressly teaches away from using kinetic energy and region-based methods to identify regions of interest by stating that "motion-based segmentation methods are computationally expensive and unreliable. Region-based methods have disadvantages such as over-segmentation and can fail to determine a region-of-interest." See Paragraph 4. Since Porikli teaches away from significant aspects of the claimed methodology embodied in Claim 1, Porikli cannot be combined with any other references to render Claim 1 obvious. Furthermore, as set forth above, Porikli incorporates every single pixel of the video into

an object volume. Accordingly, Porikili teaches away from employing a method where certain pixels are not included in any pixel group, as set forth in Claim 1 as amended.

Accordingly, Applicants' method embodied in Claim 1 is not anticipated by, or obvious in light of the combination of Tserng and Porikili and reconsideration is respectfully considered.

Claim 12

In Claim 12, pixel groups are merged unless a minimum energy density is reached. This concept is not disclosed in Porikili. In the Office Action, paragraphs 41-42 of Porikili were cited to reject claim 12. However, those paragraphs do not disclose stopping conditions when merging pixel groups, much less stopping conditions based on minimum energy densities. In fact, the concepts of volume growing and volume merging are limited to paragraphs 22-28 of Porikili. Accordingly, Claim 12 is not anticipated by, or obvious in light of the cited reference.

Claim 13

In Claim 13, pixel groups are merged unless a maximum threshold volume for the merged pixel groups is reached. Porikili does not disclose merging pixel groups until a maximum threshold volume is reached. Instead, Porikili discloses a method by which the smallest volumes are incorporated in the bigger volumes. See paragraph 28. Porikili is not concerned with maximum volume thresholds given its particular methodology. Accordingly, Claim 13 is not anticipated by, or obvious in light of the cited reference.

Claim 19

Independent Claim 19 is not addressed separately but it is respectfully submitted that this claim is allowable, among other things, for the same reasons that Claim 1 is allowable as commented on above. Accordingly, Applicants' representative respectfully submits that Claim 19 is neither anticipated by, nor obvious in view of the cited references, and reconsideration thereof is respectfully requested.

Claims 3-9 and 11-18

Dependent Claims 3-9 and 11-18 are not addressed separately but it is respectfully submitted that those claims are allowable as depending from an allowable independent claim and further in view of the comments provided above. Applicants' representative respectfully submits

that these Claims are similarly neither anticipated by, nor obvious in view of the cited references, and reconsideration thereof is respectfully requested. It is also submitted that these claims add their own limitations that render them patentable in their own right. Applicants' representative respectfully reserves the rights to argue these limitations should it become necessary in the future.

IV. Conclusion

In view of the above amendments and remarks set forth above, it is respectfully submitted that all of the claims now pending in the subject patent application should be allowable, and reconsideration thereof is respectfully requested. The Examiner is respectfully requested to telephone the undersigned if he can assist in any way in expediting issuance of a patent.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 06-1325 for any matter in connection with this response, including any fee for extension of time, which may be required.

Respectfully submitted,

Date: July 24, 2008

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